DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2020-11-20-40** **Date: 12-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Vinayakanagara Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 11-01-21

Type of Mix : Tack coat

Date of test : 11-01-21

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2020-11-20-40** **Date: 24-10-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 21-10-20

Sample Type : Birla Super 53grade

Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6

Date of test : 22-10-20

Environmental Conditions during test : Temperature: 26°C
Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.84	–
2	Finess by Air permeablity method (m^2/kg,Min)	348.6	225m^2/kg, Min
3	Density (gm/cc)	3.15	–
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	135 minutes	Not less than 30 minutes
6	Final Setting time	245 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-11-20-40** **Date: 19-11-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	22-10-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560092

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Authorized Signatory
Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-11-20-40** **Date: 24-10-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	21-10-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	255	255	1.7	98.3	90-100
3	20 mm	5443	5698	38.0	62.0	30-70
4	10 mm	4766	10464	69.8	30.2	10-35
5	4.75 mm	4234	14698	98.0	2.0	0-5
6	Pan	302	15000	100.0	0	---

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-11-20-40** **Date: 24-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.4	
3	Specific Gravity	2.69	–
4	Bulk Density(Loose) (Kg/l)	1.46	–
5	Bulk Density(Compacted) (Kg/l)	1.49	–
6	Water Absorption(%)	0.22	–

* The results obtained are satisfactory as per standard requirements.

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Authorized Signatory
Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-11-20-40** **Date: 23-10-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	21-10-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	254	254	5.1	94.9	90-100
3	10 mm	2674	2928	58.6	41.4	25-55
4	4.75 mm	1789	4717	94.3	5.7	0-10
5	Pan	283	5000	100	0	–

Assistant Executive Engineer
Byatarayanapura Sub Division
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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-11-20-40** **Date: 23-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.5	
3	Specific Gravity	2.65	_
4	Bulk Density(Loose) (Kg/l)	1.54	_
5	Bulk Density(Compacted) (Kg/l)	1.56	_
6	Water Absorption(%)	0.24	_
7	Aggregate crushing Value(%)	22.5	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	21.9	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

* The results obtained are satisfactory as per standard requirements.

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Authorized Signature
Quality Manager

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-11-20-40** **Date: 23-10-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 21-10-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 21-10-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	85	85	8.5	91.5	90-100	90-100	90-100	95-100
3	2.36 mm	154	239	23.9	76.1	60-95	75-100	85-100	95-100
4	1.18 mm	166	405	40.5	59.5	30-70	55-90	75-100	90-100
5	600 micron	179	584	58.4	41.6	15-34	35-59	60-79	80-100
6	300 micron	174	758	75.8	24.2	5-20	8-30	12-40	15-50
7	150 micron	153	911	91.1	8.9	0-10	0-10	0-10	0-15
8	Pan	89	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-11-20-40** **Date: 23-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.6	–
2	Specific Gravity	2.58	–
3	Material finer than 75 micron(%)	4.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF STEEL

Lab ID : **CP-2020-11-20-40** **Date: 22-10-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 21-10-20

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 21-10-20

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2020-11-20-40** **Date: 10-11-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-11-20

Sample Type /Size : Precast Cover Slab (100mm)

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 05/11/2020

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 07/11/2020

Lab ID	:	**CP-2020-11-20-40**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	02-11-20
Customer ID	:	Drain Bottom Slab Concrete, (1st A Cross Road)
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	07/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	31/10/2020	07/11/2020	149.21 X 150.02 X 151.42	22385	8.512	412.6	18.4	18.3
2	Drain Bottom Slab Concrete	M20	31/10/2020	07/11/2020	151.28 X 149.15 X 151.19	22564	8.042	409.1	18.1	
3	Drain Bottom Slab Concrete	M20	31/10/2020	07/11/2020	151.69 X 150.87 X 149.71	22885	8.617	418.2	18.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560092

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 28/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 02-11-20

Customer ID : Drain Bottom Slab Concrete, (1st A Cross Road)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 28/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	31/10/2020	28/11/2020	150.95 X 149.72 X 150.04	22600	8.045	533.5	23.6	23.2
2	Drain Bottom Slab Concrete	M20	31/10/2020	28/11/2020	149.63 X 150.59 X 151.98	22534	8.716	506.1	22.5	
3	Drain Bottom Slab Concrete	M20	31/10/2020	28/11/2020	151.84 X 151.06 X 151.01	22937	8.066	541.6	23.6	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 10/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-11-20

Customer ID : Drain Side Wall Concrete,(2ND A CROSS ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 10/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	03/11/2020	10/11/2020	149.87 X 150.13 X 149.98	22500	**8.512**	406.3	18.1	18.4
2	Drain Side Wall Concrete	M20	03/11/2020	10/11/2020	149.31 X 149.80 X 151.00	22367	**8.042**	406.8	18.2	
3	Drain Side Wall Concrete	M20	03/11/2020	10/11/2020	149.89 X 150.99 X 150.75	22633	**8.617**	427.8	18.9	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 01/12/2020

Lab ID	:	**CP-2020-11-20-40**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Shivapura Surrounding area in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	05-11-20
Customer ID	:	Drain Side Wall Concrete,(2ND A CROSS ROAD)
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	01/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	03/11/2020	01/12/2020	149.54 X 150.35 X 151.87	22483	**8.045**	528.7	23.5	23.2
2	Drain Side Wall Concrete	M20	03/11/2020	01/12/2020	151.84 X 149.01 X 150.25	22625	**8.716**	515.3	22.8	
3	Drain Side Wall Concrete	M20	03/11/2020	01/12/2020	149.16 X 149.20 X 150.35	22255	**8.066**	518.2	23.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-11-20-40** **Date: 24-10-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05
		Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	22-10-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.06	–
2	Finess by Air permeablity method (m^2/kg,Min)	296.5	225m^2/kg, Min
3	Density (gm/cc)	3.12	–
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	150 minutes	Not less than 30 minutes
6	Final Setting time	265 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.2mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Date: 19-11-20

Lab ID	:	**CP-2020-11-20-40**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	22-10-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

* The results obtained are satisfactory as per standard requirements.

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Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-11-20-40** **Date: 24-10-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	21-10-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	189	189	1.3	98.7	90-100
3	20 mm	7284	7473	49.8	50.2	30-70
4	10 mm	4089	11562	77.1	22.9	10-35
5	4.75 mm	3001	14563	97.1	2.9	0-5
6	Pan	437	15000	100.0	0	---

Assistant Executive Engineer
Byatarayanapura Sub Division
BBMP Bangalore-560024

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-11-20-40** **Date: 24-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.5	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.8	
3	Specific Gravity	2.66	_
4	Bulk Density(Loose) (Kg/l)	1.42	_
5	Bulk Density(Compacted) (Kg/l)	1.48	_
6	Water Absorption(%)	0.21	_

* The results obtained are satisfactory as per standard requirements.

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Quality Manager

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Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-11-20-40** **Date: 23-10-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	21-10-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	199	199	4.0	96.0	90-100
3	10 mm	3050	3249	65.0	35.0	25-55
4	4.75 mm	1502	4751	95.0	5.0	0-10
5	Pan	249	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-11-20-40** **Date: 23-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.7	
3	Specific Gravity	2.62	–
4	Bulk Density(Loose) (Kg/l)	1.48	–
5	Bulk Density(Compacted) (Kg/l)	1.55	–
6	Water Absorption(%)	0.27	–
7	Aggregate crushing Value(%)	23.9	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.1	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

* The results obtained are satisfactory as per standard requirements.

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R KARTHIK RECHAN
Authorized Signature
Quality Manager

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Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-11-20-40** **Date: 23-10-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 21-10-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 21-10-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-11-20-40** **Date: 23-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	–
2	Specific Gravity	2.59	–
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

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Authorized Signatory
Quality Manager

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Assistant Executive Engineer
Byatarayanapura Sub-Division
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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST RESULTS OF STEEL

Date: 22-10-20

Lab ID	:	**CP-2020-11-20-40**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	21-10-20
Sample Type	:	Sunvik
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	21-10-20

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2020-11-20-40** **Date: 13-11-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 09-11-20

Sample Type /Size : Precast Cover Slab (100mm)

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete

Date of test : 09/11/2020

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
2	Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
3	Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

* The results obtained are satisfactory as per standard requirements.

Executive Engineer
Byatarayanapura Sub Division
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 09/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 04-11-20

Customer ID : Drain Bottom Slab Concrete, (Brundavana Collage Back Gate Road)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 09/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	02/11/2020	09/11/2020	151.00 X 151.70 X 150.94	22907	8.512	427.5	18.7	18.7
2	Drain Bottom Slab Concrete	M20	02/11/2020	09/11/2020	150.92 X 149.99 X 149.97	22637	8.042	427.5	18.9	
3	Drain Bottom Slab Concrete	M20	02/11/2020	09/11/2020	151.74 X 149.49 X 149.90	22684	8.617	422.4	18.6	

* The results obtained are satisfactory as per standard requirements.

Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 30/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 04-11-20

Customer ID : Drain Bottom Slab Concrete, (Brundavana Collage Back Gate Road)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	02/11/2020	30/11/2020	150.89 X 149.23 X 149.72	22517	8.045	536.1	23.8	23.3
2	Drain Bottom Slab Concrete	M20	02/11/2020	30/11/2020	149.15 X 149.64 X 149.07	22319	8.716	499.8	22.4	
3	Drain Bottom Slab Concrete	M20	02/11/2020	30/11/2020	150.28 X 149.90 X 150.51	22527	8.066	532.7	23.6	

* The results obtained are satisfactory as per standard requirements.

Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 10/11/2020

Lab ID	:	**CP-2020-11-20-40**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	05-11-20
Customer ID	:	Drain Bottom Slab Concrete, (SBI BANK ROAD)
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	10/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	03/11/2020	10/11/2020	150.44 X 149.75 X 149.56	22528	8.512	420.0	18.6	18.4
2	Drain Bottom Slab Concrete	M20	03/11/2020	10/11/2020	149.81 X 149.68 X 150.03	22423	8.042	412.0	18.4	
3	Drain Bottom Slab Concrete	M20	03/11/2020	10/11/2020	151.16 X 151.76 X 149.78	22941	8.617	419.1	18.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
BBMP Bangalore-560024

FOR CIVIL Pro.
CIVIL Pro Sig..... Date..... BANGALORE
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 01/12/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-11-20

Customer ID : Drain Bottom Slab Concrete, (SBI BANK ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 01/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	03/11/2020	01/12/2020	149.99 X 150.52 X 150.79	22577	8.045	525.7	23.3	23.3
2	Drain Bottom Slab Concrete	M20	03/11/2020	01/12/2020	149.45 X 149.72 X 150.02	22375	8.716	514.1	23.0	
3	Drain Bottom Slab Concrete	M20	03/11/2020	01/12/2020	151.96 X 150.32 X 150.62	22842	8.066	541.8	23.7	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 10/11/2020

Lab ID : CP-2020-11-20-40

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-11-20

Customer ID : Drain Bottom Slab Concrete, (SBI BANK ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 10/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	03/11/2020	10/11/2020	150.61 X 150.53 X 151.95	22671	8.512	410.9	18.1	18.3
2	Drain Bottom Slab Concrete	M20	03/11/2020	10/11/2020	149.42 X 151.19 X 149.83	22591	8.042	425.4	18.8	
3	Drain Bottom Slab Concrete	M20	03/11/2020	10/11/2020	149.49 X 151.74 X 151.43	22684	8.617	408.7	18.0	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 01/12/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-11-20

Customer ID : Drain Bottom Slab Concrete, (SBI BANK ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 01/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Slab Concrete	M20	03/11/2020	01/12/2020	151.33 X 149.86 X 149.03	22678	8.045	523.7	23.1	23.0
2.	Drain Bottom Slab Concrete	M20	03/11/2020	01/12/2020	150.03 X 151.96 X 151.37	22798	8.716	520.9	22.8	
3	Drain Bottom Slab Concrete	M20	03/11/2020	01/12/2020	149.38 X 150.52 X 149.82	22485	8.066	519.5	23.1	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore South

CIVIL Pro Sig..... Date..... BANGALORE

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Authorized Signatory
Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 12/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 07-11-20

Customer ID : Drain Side Wall Concrete, (Brundavana Collage Back Gate Road)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 12/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	05/11/2020	12/11/2020	149.29 X 149.13 X 150.18	22263	**8.512**	419.7	18.9	18.6
2	Drain Side Wall Concrete	M20	05/11/2020	12/11/2020	150.00 X 151.72 X 151.28	22758	**8.042**	427.6	18.8	
3	Drain Side Wall Concrete	M20	05/11/2020	12/11/2020	150.07 X 151.04 X 149.88	22668	**8.617**	412.8	18.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

FOR CIVIL Pro.

CIVIL Pro BANGALORE Sig..... Date.....

DR KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 03/12/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 07-11-20

Customer ID : Drain Side Wall Concrete, (Brundavana Collage Back Gate Road)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 03/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	05/11/2020	03/12/2020	151.65 X 151.60 X 150.19	22991	8.045	533.6	23.2	23.2
2	Drain Side Wall Concrete	M20	05/11/2020	03/12/2020	150.97 X 150.04 X 149.56	22652	8.716	519.2	22.9	
3	Drain Side Wall Concrete	M20	05/11/2020	03/12/2020	151.81 X 150.04 X 151.56	22777	8.066	532.7	23.4	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 13/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 09-11-20

Customer ID : Drain Side Wall Concrete, (SBI BANK ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	06/11/2020	13/11/2020	151.54 X 151.92 X 149.23	23021	**8.512**	420.7	18.3	18.5
2	Drain Side Wall Concrete	M20	06/11/2020	13/11/2020	149.21 X 149.90 X 149.39	22366	**8.042**	422.8	18.9	
3	Drain Side Wall Concrete	M20	06/11/2020	13/11/2020	149.79 X 150.53 X 150.13	22549	**8.617**	411.2	18.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

FOR CIVIL Pro.

CIVIL Pro Sig..... Date..... BANGALORE

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 04/12/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 09-11-20

Customer ID : Drain Side Wall Concrete, (SBI BANK ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 04/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	06/11/2020	04/12/2020	149.99 X 149.46 X 149.93	22418	8.045	530.3	23.7	23.5
2	Drain Side Wall Concrete	M20	06/11/2020	04/12/2020	149.08 X 151.64 X 150.39	22606	8.716	516.3	22.8	
3	Drain Side Wall Concrete	M20	06/11/2020	04/12/2020	150.91 X 150.79 X 150.62	22756	8.066	544.5	23.9	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560092

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL Pro Sig..... Date..... BANGALORE

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-11-20-40** **Date: 13/11/2020**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 09-11-20

Customer ID : Drain Side Wall Concrete, (SBI BANK ROAD)

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/11/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	06/11/2020	13/11/2020	151.92 X 150.50 X 149.47	22865	**8.512**	415.2	18.2	18.3
2	Drain Side Wall Concrete	M20	06/11/2020	13/11/2020	149.57 X 151.00 X 150.88	22585	**8.042**	415.3	18.4	
3	Drain Side Wall Concrete	M20	06/11/2020	13/11/2020	149.42 X 151.38 X 150.24	22620	**8.617**	417.9	18.5	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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R KARTHIK RECHAN
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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 04/12/2020

Lab ID	:	**CP-2020-11-20-40**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer's Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	09-11-20
Customer ID	:	Drain Side Wall Concrete, (SBI BANK ROAD)
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	04/12/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete	M20	06/11/2020	04/12/2020	151.12 X 150.98 X 151.72	22816	8.045	535.3	23.5	22.9
2	Drain Side Wall Concrete	M20	06/11/2020	04/12/2020	149.00 X 150.32 X 151.20	22398	8.716	493.6	22.0	
3	Drain Side Wall Concrete	M20	06/11/2020	04/12/2020	151.47 X 150.86 X 149.27	22850	8.066	531.0	23.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

FOR CIVIL Pro.

CIVIL Pro Sig..... Date..... BANGALORE

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST RESULTS OF GRADATION FOR GSB
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2020-11-20-40** **Date: 21-12-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05
Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 19-12-20

Type of Mix : GSB (Granular Sub Base)

Date of test : 19-12-20

Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec. Limit Vide Table 400.1 MORTH Specification
75	0	0	0	100	100
53	997	997	9.97	90.03	80-100
26.5	1685	2682	26.82	73.18	55-90
9.5	1292	3974	39.74	60.26	35-65
4.75	1490	5464	54.64	45.36	25-55
2.36	1764	7228	72.28	27.72	20-40
0.425	1666	8894	88.94	11.06	10-25
0.075	1106	10000	100.00	0.00	0-5

TESTS ON FILLER SCREEN MATERIALS

Sl no	Particulars	Test results	Spec.Limit Vide Table
1	Liquid Limit, %	21.33%	Maximum 25
2	Plasticity index, %	Non plastic	Maximum 6

* The results obtained are satisfactory as per standard requirements.

Byatarayanapura Sub Div...
B.B.M.P Bangalore

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2020-11-20-40** **Date: 26-12-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 24-12-20

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 24-12-20

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	2.9	97.1	95-100
22.4	2259	2574	23.4	76.6	60-80
11.2	2179	4753	43.2	56.8	40-60
4.75	2251	7004	63.7	36.3	25-40
2.36	1621	8625	78.4	21.6	15-30
0.6	623	9248	84.1	15.9	8-22
0.075	1338	10586	96.2	3.8	0-5

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID : **CP-RW-2020-11-20-40** **Date: 26-12-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 24-12-20

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of test : 24-12-20

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2020-11-20-40** **Date: 26-12-20**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64
Customer Reference	:	BBMP/EE/BTP/WO/131/2020-21
Date of Receipt	:	24-12-20
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	24-12-20

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.5%	
Combined Flakiness and Elongation Index for WMM	25.3%	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT ON BITUMEN

Lab ID : **CP-RW-2020-11-20-40** **Date: 31-12-20**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer's Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 29-12-20

Sample Type : Bitumen

Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)

Date of test : 29-12-20

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**64**	60 to 70
2	Softening Point, °C	**51.2**	Min. 40°C
3	Ductility, cm	**98**	Min. 75cm
4	Flash point, °C	**245**	Min. 220°C
	Fire point, °C	**272**	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Div.
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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2020-11-20-40** **Date: 04-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 01-01-21

Type of Mix : DBM-Plant (Dense Bituminous Macadam)

Date of test : 01-01-21

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	250	250	5.00	95.00	90-100
19	350	600	12.00	88.00	71-95
13.2	450	1050	21.00	79.00	56-80
4.75	1750	2800	56.00	44.00	38-54
2.36	400	3200	64.00	36.00	28-42
0.3	1350	4550	91.00	9.00	7-21
0.075	250	4800	96.00	4.00	2-8
PAN	200	5000	0.00	0	0

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Lab ID : **CP-RW-2020-11-20-40** **Date: 04-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 01-01-21

Type of Mix : DBM (Dense Bituminous Macadam)

Date of test : 01-01-21

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.0	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	10.0		
Strength	Aggregate Impact Value	18.0	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.38	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : **CP-RW-2020-11-20-40** **Date: 04-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 01-01-21

Type of Mix : DBM (Dense Bituminous Mecadam)

Date of test : 01-01-21

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	–

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2020-11-20-40**	**Date: 04-01-21**
Project Name	:	Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05 **Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division**	
Agency	:	M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64	
Customer Reference	:	BBMP/EE/BTP/WO/131/2020-21	
Date of Receipt	:	01-01-21	
Type of Mix	:	DBM(Dense Bitumnous Macadam)	
Date of test	:	01-01-21	

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com
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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2020-11-20-40** **Date: 11-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 09-01-21

Type of Mix : DBM (Dense Bituminous Macadam), (SBI BANK ROAD)

Date of test : 09-01-21

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	475	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.8	4.8
4	Average percentage	%	4.8	

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Quality Manager

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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Lab ID : CP-RW-2020-11-20-40 Date: 11-01-21

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 475

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	14.4	14.4	3.03	97.0	90-100
19	24	38.4	8.08	91.9	71-95
13.2	120	158.4	33.35	66.7	56-80
4.75	96	254.4	53.56	46.4	38-54
2.36	80	334.4	70.40	29.6	28-42
0.3	62.4	396.8	83.54	16.5	7-21
0.075	52.8	449.6	94.65	5.3	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 476

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10(grading -2)
37.5	0	0	0	100.0	100
26.5	14.8	14.8	3.11	96.9	90-100
19	24	38.8	8.15	91.8	71-95
13.2	120	158.8	33.36	66.6	56-80
4.75	96	254.8	53.53	46.5	38-54
2.36	78	332.8	69.92	30.1	28-42
0.3	62.4	395.2	83.03	17.0	7-21
0.075	52.8	448	94.12	5.9	2-8

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2020-11-20-40** **Date: 07-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-01-21

Type of Mix : BC-Plant (Bituminous Concrete)

Date of test : 05-01-21

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P Bangalore-560024

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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Certificate No.: TC-5548

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : **CP-RW-2020-11-20-40** **Date: 08-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-01-21

Type of Mix : BC(Bitumenous Concrete)

Date of test : 05-01-21

Type of Binder : 60/70

% of Binder Used : 5.0%

Weight of Aggregate : 200.0 gm

Weight of Binder : 10.0 gm

Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M.P. Bangalore-560024

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Certificate No.: TC-5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : **CP-RW-2020-11-20-40** **Date: 08-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-01-21

Type of Mix : BC (Bituminous Concrete)

Date of test : 05-01-21

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
B.B.M.P Bangalore-560024

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : **CP-RW-2020-11-20-40** **Date: 08-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 05-01-21

Type of Mix : BC (Bituminous Concrete)

Date of test : 05-01-21

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : **CP-RW-2020-11-20-40** **Date: 12-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 11-01-21

Type of Mix : BC (Bituminous Concrete), (SBI BANK ROAD)

Date of test : 11-01-21

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	470	472
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	6.00	5.60
4	Average percentage	%	5.8	

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Lab ID : CP-RW-2020-11-20-40 Date: 12-01-21

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 470

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.9	99.1	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.9	62.1	53-71
2.36	88	266	56.6	43.4	42-58
1.18	29	295	62.8	37.2	34-48
0.6	11	306	65.1	34.9	26-38
0.3	46	352	74.9	25.1	18-28
0.15	45	397	84.5	15.5	12-20
0.075	53	450	95.7	4.3	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 472

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	14.0	86.0	70-88
4.75	112	178	37.7	62.3	53-71
2.36	88	266	56.4	43.6	42-58
1.18	29	295	62.5	37.5	34-48
0.6	11	306	64.8	35.2	26-38
0.3	46	352	74.6	25.4	18-28
0.15	45	397	84.1	15.9	12-20
0.075	55	452	95.8	4.2	4-10

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Eswarayana
E.B.M.P Bangalore South

End of Report

CIVIL Pro
Sig.....
Date.....
BANGALORE

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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4, 7TH MAIN MALLESWARAM, BANGALORE -3
Certificate No.: TC-5548

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2020-11-20-40** **Date: 12-01-21**

Project Name : Improvements to Roads and RCC Drains at Brundhavana College Road Vinayakanagara Shivapura and Surrounding Area in Ward No 05

Improvements to RCC Drain and Roads at Brundavana collage Road and Cross Roads in Ward No.05, Byatarayanapura Sub Division

Agency : M/s Sathya Constructions, (Prop) R Satheesh, No:600, Down Bazaar Road, Yelahanka, Bangalore-64

Customer Reference : BBMP/EE/BTP/WO/131/2020-21

Date of Receipt : 11-01-21

Type of Mix : Tack coat

Date of test : 11-01-21

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Page 1/1
End of Report

Assistant Executive Engineer
Byatarayanapura Sub Division
B.B.M P Bangalore-560024

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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